

WHAT IS CLAIMED IS:

1. A structure for mounting an engine knock sensor on a mounting seat,

said knock sensor comprising an annular main body and an external connecting portion provided on an outer peripheral surface of said main body;

said main body being comprised of a main cylindrical metal member which includes a cylindrical through-hole portion having a through-hole formed therein at a center portion thereof and a flange portion formed at an end of said through-hole portion adjacent to an internal combustion engine and extending outwardly in a circumferential direction of said through-hole portion, a piezoelectric element of a ring-like shape fixedly fit around said main cylindrical metal member and an armoring resin body covering said main cylindrical metal member and said piezoelectric element;

said external connecting portion being formed integrally with said armoring resin body so that connecting conductors extending from said piezoelectric element are covered by said armoring resin body at a predetermined position in the circumferential direction of said main body;

said knock sensor being destined to be fixedly secured on the mounting seat formed on a surface of said internal combustion engine for detecting vibration of said internal combustion engine transmitted to said piezoelectric element from said mounting seat by way of said main cylindrical metal member,

said mounting structure comprising clamping means extending through said through-hole portion for fixedly clamping said main body onto said mounting seat;

an engine-side engaging portion provided at a position radially distanced from a center axis of said clamping means of said internal combustion engine; and

a knock sensor side bearing portion provided on said knock sensor for engaging with said engine-side engaging portion.

2. A structure for mounting an engine knock sensor according to claim 1,

wherein said engine-side engaging portion is implemented in the form of an engaging stud disposed upstandingly at a location in the vicinity of said mounting seat, and

wherein said knock sensor side bearing portion is constituted by said external connecting portion which is so formed as to project outwardly in a radial direction from said main body.

3. A structure for mounting an engine knock sensor according to claim 1,

wherein said engine-side engaging portion is implemented in the form of an engaging stud disposed upstandingly at a location in the vicinity of said mounting seat, and

wherein said knock sensor side bearing portion is constituted by a bearing projection formed so as to project outwardly in a radial direction from said main body.

4. A structure for mounting an engine knock sensor according to claim 1,

wherein said mounting seat is formed at a top surface of a column-like pedestal portion formed on a surface of said engine block,

said engine-side engaging portion is realized as an outer peripheral engaging surface formed by a portion of the outer peripheral surface of said column-like pedestal portion retracted radially inwardly as compared with the other outer peripheral surface portion of said armoring resin body, and

wherein said knock sensor side bearing portion is constituted by a lower resin projection formed by a portion of said armoring resin body projecting toward said internal combustion engine.

5. A structure for mounting an engine knock sensor according to claim 4,

wherein said outer peripheral engaging surface is realized in the form of a planar surface formed by removing a portion of an arcuate outer peripheral surface of said column-like pedestal portion.

6. A structure for mounting an engine knock sensor according to claim 4,

wherein said lower resin projection is provided on a side of said external connecting portion which faces said internal combustion engine.

7. A structure for mounting an engine knock sensor according to claim 1,

wherein said engine-side engaging portion is realized in the form of a seat recess portion formed concavely in said mounting seat, and

wherein said knock sensor side bearing portion is constituted by a lower metal projection formed on a lateral side of said flange portion of said main cylindrical metal member facing said internal combustion engine and projecting toward said internal combustion engine.

8. A structure for mounting an engine knock sensor according to claim 1,

wherein said engine-side engaging portion is realized in the form of a seat recess portion formed concavely in said mounting seat, and

wherein said knock sensor side bearing portion is constituted by a pin having one end portion inserted into a flange recess portion formed concavely in a lateral surface of said flange portion of said main cylindrical metal member while the other end portion of said pin projects from the lateral surface of said flange portion which faces said internal combustion engine.

9. An engine knock sensor, comprising:

an annular main body and an external connecting portion provided on an outer peripheral surface of said main body;

said main body being comprised of a main cylindrical metal member which includes a cylindrical through-hole portion having a through-hole formed therein at a center portion thereof and a flange portion formed at an end of said through-hole portion adjacent

to an internal combustion engine and extending radially outwardly in a circumferential direction of said through-hole portion, a piezoelectric element of a ring-like shape fixedly fit around said main cylindrical metal member and an armoring resin body covering said main cylindrical metal member and said piezoelectric element;

said external connecting portion being formed integrally with said armoring resin body so that connecting conductors extending from said piezoelectric element are covered by said armoring resin body at a predetermined position in the circumferential direction of said main body;

wherein said engine knock sensor is fixedly clamped onto a mounting seat formed on a surface of said internal combustion engine by means of clamping means which extends through said through-hole portion for detecting vibration of said internal combustion engine transmitted to said piezoelectric element from said mounting seat by way of said main cylindrical metal member, and

wherein said engine knock sensor includes a knock sensor side bearing portion designed to engage with an engine-side engaging portion disposed at a location radially distanced from a center axis of said clamping means of said internal combustion engine.

10. An engine knock sensor according to claim 9,
wherein said engine-side engaging portion is implemented in the form of an engaging stud disposed upstandingly at a location in the vicinity of said mounting seat, and

wherein said knock sensor side bearing portion is constituted by said external connecting portion formed so as to project outwardly in the radial direction from said main body.